This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-50. Canceled

51. (Original) A computer implemented process for producing a trace file for use in spectrum analysis, the method comprising:

performing a Fourier Transform on Free Induction Decay (FID) data to produce an initial spectrum;

filtering a selected region of said initial spectrum to produce a filtered spectrum; and

phasing said filtered spectrum to produce a measured spectrum having a flat baseline and well defined positive peaks.

52. (Original) The method of claim **51** wherein filtering comprises applying a notch filter to said selected region to suppress a peak associated with a contaminant in said contaminant region.

53. (Original) The method of claim **52** wherein applying a notch filter comprises producing an adjusted set of notch filter parameters and applying a notch filter employing said adjusted set of notch filter parameters to said selected region.

54. (Original) The method of claim **53** wherein applying a notch filter comprises iteratively adjusting said set of notch filter parameters and applying said adjusted notch filter parameters to a notch filter and applying said notch filter to said selected region until a sum of the absolute values of areas defined by peaks above and below a baseline of said initial spectrum is minimized.

55. (Original) The method of claim **51** wherein phasing said adjusted spectrum comprises adjusting real and imaginary components of said filtered spectrum until said filtered spectrum has all positive, well defined peaks.

56. (Original) The method of claim **51** wherein performing a fourier transform comprises performing a weighted Fourier Transform with weights that provide for enhancement of said initial spectrum.

57. (Original) The method of claim **56** wherein performing a weighted Fourier Transform comprises employing weights that perform a line broadening function to said initial spectrum.

58. (Original) The method of claim **51** further comprising defining the size of a window on said initial spectrum.

59. (Original) The method of claim **58** wherein defining the size of a window comprises scaling said initial spectrum.

60. (Original) The method of claim **51** further comprising correcting said initial spectrum for drift effects.

61. (Original) The method of claim **51** further comprising performing baseline correction on said measured spectrum.

62. (Original) A computer readable medium for providing codes operable to direct a processor circuit to produce a trace file for use in spectrum analysis, the computer readable medium comprising:

codes for automatically causing the processor circuit to perform a Fourier Transform on Free Induction Decay (FID) data to produce an initial spectrum;

codes for automatically causing the processor circuit to filter a selected region of said initial spectrum to produce a filtered spectrum; and

codes for automatically causing the processor circuit to phase said filtered spectrum to produce a measured spectrum having a flat baseline and well defined positive peaks.

63. (Original) An apparatus for producing a trace file for use in spectrum analysis, the apparatus comprising:

means for automatically performing a Fourier Transform on Free Induction Decay (FID) data to produce an initial spectrum;

means for automatically filtering a selected region of said initial spectrum to produce a filtered spectrum; and

means for automatically phasing said filtered spectrum to produce a measured spectrum having a flat baseline and well defined positive peaks.

64. (Original) A signal for causing a processor circuit to produce a trace file for use in spectrum analysis, the signal including:

a first segment comprising codes for automatically causing said processor circuit to perform a Fourier Transform on Free Induction Decay (FID) data to produce an initial spectrum;

a second segment comprising codes for automatically causing the processor circuit to filter a selected region of said initial spectrum to produce a filtered spectrum; and

a third segment comprising codes for automatically causing the processor circuit to phase said filtered spectrum to produce a measured spectrum having a flat baseline and well defined positive peaks.

65-77. Canceled.